P19296.P18

**GREENBLUM & BERNSTEIN, P.L.C.**
**Intellectual Property Causes**
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**Reston, VA 20191**
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Attorney Docket No. P19296

**Mail Stop Amendment**

In re application of : Dr. Jens Christian KÄRGER

Application No. : 09/585,568 Group Art Unit : 3726

Filed : June 2, 2000 Examiner : M. JIMENEZ

For : ELASTIC ROLLER AND PROCESS FOR PRODUCING SAME

**Mail Stop Amendment**
U.S. Patent and Trademark Office
220 20th Street S.
Customer Window
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202
Sir:

Transmitted herewith is an **Appeal Brief under 37 C.F.R. § 1.192** (in triplicate) in the above-captioned application.

___ Small Entity Status of this application under 37 C.F.R. 1.9 and 1.27 has been established by a previously filed statement.
___ A verified statement to establish small entity status under 37 C.F.R. 1.9 and 1.27 is enclosed.
___ An Information Disclosure Statement, PTO Form 1449, and references cited.
___ No additional fee is required.

The fee has been calculated as shown below:

| Claims After Amendment | No. Claims Previously Paid For | Present Extra | Small Entity | | Other Than A Small Entity | |
|---|---|---|---|---|---|---|
| | | | Rate | Fee | Rate | Fee |
| Total Claims: 58 | *60 | 0 | x 9= | $ | x 18= | $ 0.00 |
| Indep. Claims: 2 | **3 | 0 | x 43= | $ | x 86= | $ 0.000 |
| Multiple Dependent Claims Presented | | | +145= | $ | +290= | $ 0.00 |
| Appeal Brief Filing Fee | | | | $ | | $330.00 |
| | | | Total: | $ | Total: | $330.00 |

___ Please charge my Deposit Account No. 19-0089 in the amount of $____.
_X_ A Check in the amount of $330.00 to cover the filing fee(s) is included.
_X_ The U.S. Patent and Trademark Office is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 19-0089.
_X_ Any additional filing fees required under 37 C.F.R. 1.16.
_X_ Any patent application processing fees under 37 C.F.R. 1.17, including any required extension of time fees in any concurrent or future reply requiring a petition for extension of time for its timely submission (37 CFR 1.136)(a)(3).

Will S. Lyddane Reg. No. 41,568

Bruce H. Bernstein
Reg. No. 29,027

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IFW AF/3726

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | | | |
|---|---|---|---|---|
| Appellants | : | Dr. J.C. KÄRGER et al. | ) | Confirmation No.: 5191 |
| Appln. No. | : | 09/585,568 | ) | Group Art Unit: 3726 |
| Filed | : | June 2, 2000 | ) | Examiner: M. Jimenez |
| For | : | ELASTIC ROLLER AND PROCESS FOR PRODUCING SAME | | |



**APPEAL BRIEF UNDER 37 C.F.R. § 1.192**

Commissioner for Patents
U.S. Patent and Trademark Office
220 20th Street S.
Customer Window, Mail Stop_____
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

Sir:

This appeal is from the Examiner's final rejection of claims 1, 2, 11-27, 29-36, 38, 39, and 41 as set forth in the Final Office Action of April 5, 2004.

A Notice of Appeal in response to the April 5, 2004 Final Office Action was filed on June 7, 2004.

The requisite fee under 37 C.F.R. 1.17(c) in the amount of $ 330.00 for the filing of the Appeal Brief is being paid by check, submitted herewith. However, if for any reason the necessary fee is not associated with this file, the Commissioner is authorized to charge the fee for the Appeal Brief and any necessary extension of time fees to Deposit Account No. 19 - 0089.

This appeal brief is being submitted in triplicate, pursuant to 37 C.F.R. 1.192(a).

(1) REAL PARTY IN INTEREST

The real party in interest is Voith Sulzer Papiertechnik Patent GmbH by an assignment recorded in the U.S. Patent and Trademark Office on August 8, 2000 at Reel 011041 and Frame 0673.

(2) RELATED APPEALS AND INTERFERENCES

No related appeals and/or interferences are pending.

(3) STATUS OF THE CLAIMS

Claims 1, 2, 11-27, 29-36, 38, 39, and 41, stand finally rejected, claims 4-10, 37, 40, and 42-60 are withdrawn from consideration, and claims 3 and 28 have been canceled.

(4) STATUS OF THE AMENDMENTS

An amendment under 37 C.F.R.§ 1.111 was filed November 7, 2003, and Appellants submit that no amendments after final have been filed subsequent to that date.

(5) SUMMARY OF THE INVENTION

The instant invention is directed to a roller, e.g., for smoothing paper webs. The roller includes a hard roller core, which includes metal, and an elastic coating layer located on an outer side of the hard roller core. The elastic coating layer includes an elastic matrix material and fillers embedded in the matrix material (Specification page 1, lines 9-13).

The trend in paper manufacture is to perform glazing in an online operation, i.e., the paper web leaving the paper machine or the coating machine is directly guided through the paper smoothing device (calender), the requirements for the rollers of the smoothing device are higher than before, e.g., with respect to temperature resistance.

Because of the high transport speeds of the paper web which are required for online operation and, thus, the resulting high rotation speeds of the calender rollers, the nip frequency, i.e., the frequency with which the coating is compressed and released again, is increased. As a result, roller temperatures increase. These high temperatures resulting from online operation lead to problems which, in the known elastic rollers, can ultimately lead to the destruction of the plastic coating. In particular, in known plastic coatings, maximum temperature differentials of approximately 20° C over the width of the rollers are acceptable and the plastic materials conventionally used for the coating have a substantially higher thermal expansion coefficient than the conventionally employed steel rollers or chilled iron rollers. Therefore, a temperature increase causes high axial stress between the steel or chilled iron roller and the plastic coating connected thereto. Because of these high stresses, especially in combination with localized heat points within the plastic coating, so-called "hot spots" can occur at locations where detachment or even rupture of the plastic layer will occur (Specification page 1, line 24 through page 2, line 16).

To avoid the above-noted problems, the instant invention uses a roller core 10 comprised of, e.g., steel or chilled iron. At an outer side of roller core 10, an elastic coating layer 12 is provided (Specification page 6, lines 1-3). The coating layer 12 can be formed by an elastic matrix material 16 into which metallic fillers 17 are introduced (Specification page 6, lines 23-24). With such a distribution of metallic fillers 17, coating layer 12 in a radially inwardly region, i.e., in the region near roller core 10, has a total thermal expansion coefficient which is dominated by metallic fillers 17, while in the radially outwardly region, i.e., in the region near the outer surface of coating layer 12, the

thermal expansion coefficient of coating layer 12 is determined primarily by the thermal expansion coefficient of elastic matrix material 16. In this manner, the radially outwardly region of coating layer 12 has a higher elasticity, and, at the same time, longitudinal tensions resulting from different thermal expansion coefficients between coating layer 12 and roller core 10 can be reduced in the connection area (Specification page 13, lines 6-14). The heat which is produced during use of the coated roller, e.g., due to flex work, and especially at superheat locations within coating layer 12 at crystallization points can be dissipated very quickly in the direction toward roller core 10 and, subsequently, dissipated in the radial or axial direction of roller core 10 (Specification page 12, lines 10-12). The size range of the rollers lies within lengths of about 3 to 12 m and diameters of about 450 to 1500 mm, respectively. The roller can withstand linear forces of up to about 600 N/mm and compressive strain of up to about 130 N/mm2 (Specification page 1, lines 21-23).

(6) ISSUES

(A) Whether Claims 1, 2, 11 - 21, 25, 29 - 33, 35, 36, 38, 39, and 41 are Improperly Rejected Under 35 U.S.C. § 103(a) as Unpatentable Over Applicant's Admitted Prior Art on pages 1 and 2 of the specification [hereinafter "AAPA"] in view of EDDY et al. (U.S. Patent No. 4,321,033) [hereinafter "EDDY"];

(B) Whether Claims 22 - 24 are Improperly Rejected Under 35 U.S.C. § 103(a) as Unpatentable Over AAPA in view of EDDY and further in view of SUKENIK (U.S. Patent No. 3,852,862);

(C) Whether Claims 26 and 27 are Improperly Rejected Under 35 U.S.C. § 103(a) as Unpatentable over AAPA in view of EDDY and further in view of BROUWER (U.S. Patent No. 5,735,388); and

(D) Whether Claim 34 is Improperly Rejected Under 35 U.S.C. § 103(a) as Unpatentable over AAPA in view of EDDY and further in view of YAMAMOTO (U.S. Patent No. 4,990,963).

(7) GROUPING OF CLAIMS

For the purpose of this appeal, Appellants submit that none of the claims stand or fall together. Therefore, each of claims 1, 2, 11-27, 29-36, 38, 39, and 41 are separately patentable for the reasons set forth hereinbelow.

(8) ARGUMENT

(A) The Rejection of Claims 1, 2, 11 - 21, 25, 29 - 33, 35, 36, 38, 39, and 41 under 35 U.S.C. § 103(a) as being unpatentable over AAPA in view of EDDY et al. is in error, the decision of the Examiner to reject these claims should be Reversed, and the application should be Remanded to the Examiner.

The Examiner asserts that AAPA shows the general structure of an elastic roll, but fails to teach metal fillers, thermal conductivity of the fillers in relation to a matrix material, and at least portion of the fillers being metallic fillers arranged to improve thermal conductivity of the elastic coating layer such that heat is dissipated toward the hard roller core and dissipated axially by the hard roller core. However, the Examiner asserts that such features are shown in EDDY, and that it would have been obvious to modify the AAPA to include the features of EDDY. Appellants traverse the Examiner's assertions.

Appellants' independent claim 1 recites, inter alia, a hard roller core, an elastic coating layer at an outer side of said hard roller core comprising an elastic matrix material and fillers imbedded in said matrix material, and at least a portion of said fillers comprising metallic fillers arranged to improve thermal conductivity of said elastic coating layer such that heat is dissipated toward the hard roller core and dissipated axially by the hard roller core, wherein the elastic coating layer has a smooth surface structured and arranged for smoothing paper webs and wherein said elastic roller is formed with a length within a range of 3 to 12 m and a diameter within a range of 450 to 1500 mm and is structured to withstand compressive forces of up to 130 N/mm2. Appellants submit that no proper combination of the AAPA and EDDY renders unpatentable the instant invention.

As noted by the Examiner, Appellants acknowledge that the general construction of an elastic roll is known, i.e., a metal core with an elastic cover. However, the AAPA fails to teach or suggest any of the other subject matter recited in the pending claims.

To address this deficiency of the AAPA, the Examiner has cited the patent to EDDY. However, in contrast to the elastic roll of the AAPA, which is directed to a roll in paper production having a length of 3 - 12 meters and a diameter of 450 - 1500 mm, that can withstand linear forces of up to about 600 N/mm and compressive strain of up to 130 N/mm2, EDDY is directed to a fusing roller in a printer/copier.

Appellants note that, while the specific size of the fusing roll is not disclosed, those ordinarily skilled in the art would readily recognize that an element within a printer/copier would not have length of 3 - 12 meters and/or a diameter of 450 - 1500 mm. Moreover, while again silent with regard to the linear forces and compressive

strains, EDDY provides no suggestion that the coating on the disclosed fusing roll could withstand the forces and/or strains recited in independent claim 1.

Because there is no teaching or suggestion that the coating of EDDY is structured in such a manner that it could withstand the recited linear forces and compressive strains, Appellants submit that it would not have been obvious to modify the elastic roll of the AAPA with the coating of EDDY.

Appellants further note that, as the rolls are intended for wholly distinct operational purposes, it would not have been obvious to modify the AAPA in view of EDDY. In particular, Appellants note that the AAPA discloses an elastic roll in which hot spots have been known to arise due to flexure of the elastic covering against a counter roll. This flexure generates heat that can ultimately destroy the covering. In contrast to the AAPA, Appellants note that EDDY does not identify or address problems arising due to flexure of the elastic covering. In fact, it is not even apparent from EDDY whether there is any flexure of the covering of fusing roll. Thus, Appellants submit that EDDY fails to provide any teaching or suggestion of addressing the problem identified in the AAPA, and certainly fails to suggest the solution found by the inventors.

Further still, Appellants note that, in contrast to the instant invention, the roll of EDDY is specially designed with a heating element within the core to radiate heat outwardly. In fact, EDDY discloses that the roll is constructed so that the thermal conductivity of the brush and elastomeric material is three times the thermal conductivity of the elastomeric material alone. In this manner, a lower temperature can be utilized by the heating element of EDDY in the core, while ensuring the high surface temperature needed to transfer heat to the surfaces of the copier intended to fuse the toner powder

image to a support or sheet due to the increasing heat emanating through the arrangement of the brush and elastomeric material.

Because the rolls of AAPA appear to be destroyed by the high heat generated by the flexure of the covering, Appellants submit that it would not have been obvious to modify the AAPA in view of EDDY. Appellants submit that such a modification would intentionally radiate heat outwardly from the core, as taught by EDDY, which would increase the heat at the surface, so as to more rapidly break down the elastic covering of the AAPA.

Since the asserted combination of documents would prevent the AAPA from operating in its intended manner, i.e., the break down of the elastic coating would be exacerbated by the asserted combination of teachings, Appellants submit that for this additional reason it would not have been obvious to modify the AAPA in the manner asserted by the Examiner.

Further, Appellants note that, as EDDY explicitly discloses that the roll is formed to radiate heat, i.e., increase heat radially outwardly, so that this heat can be transferred to surfaces in the copier to ensure satisfactory fusing of the toner powder image to a support or sheet, EDDY fails to disclose the recited heat dissipation of at least independent claim 1, which draws heat away from its outer surface, i.e., that at least a portion of the fillers, which include metallic fillers, are arranged to improve thermal conductivity of said elastic coating layer such that heat is dissipated toward the hard roller core. Therefore, even assuming, arguendo, that it were obvious to combine the AAPA and EDDY (which Appellants submit it is not), Appellants submit that the heat dissipation of elastic

covering of the modified roll would be contrary to the recited features of the instant invention, such that this would not render the invention obvious.

Moreover, as EDDY specifically discloses a heating element within the core in order to supply the heat to radiate outwardly, so as to transfer sufficient heat to the surfaces involved in fusing the toner powder image, Appellants further submit that EDDY fails to provide any teaching that the roll core of EDDY would axially dissipate heat, as recited in the Appellants' claims.

In fact, Appellants submit that EDDY is structured to operate in an exactly opposite manner than the invention recited in at least independent claim 1. That is, EDDY is structured to ensure uniform heat radiating to the outer surface of the fusing roll to heat surfaces of the copier/printer in order to satisfactorily fuse the toner powder image to the support or sheet, whereas the pending claims recite at least a portion of the fillers arranged to improve thermal conductivity of said elastic coating layer to dissipate heat toward the hard roller core, and the roller core is provided to dissipate heat axially.

Appellants further submit that this heat dissipation is not an intended use of the device, but is a characteristic property of the roll due to its specific construction and arrangement of elements, just as the roll of EDDY is specially constructed to ensure that heat radiates outwardly in order to achieve the desired fusing in the copier/printer. Therefore, Appellants submit that the arrangement of elements for heat dissipation is entitled to patentable weight, and must be shown in the applied art in order to render obvious the instant invention.

In view of the foregoing, Appellants submit that no proper combination of the AAPA and EDDY teaches or suggest at least a portion of said fillers comprising metallic

fillers arranged to improve thermal conductivity of said elastic coating layer such that heat is dissipated toward the hard roller core and dissipated axially by the hard roller core, as recited in at least independent claim 1.

Accordingly, Appellants submit that the teachings of AAPA and EDDY cannot be properly combined, and that no proper combination of the art of record teaches or suggests the combination of features recited in at least independent claim 1. Thus, Appellants submit that this rejection is improper and should be withdrawn.

Further still, Appellants note that EDDY is used in a printer or copier, which is in stark contrast to the roller of the instant invention. In this regard, the roller of EDDY is arranged to heat surfaces within the copier/printer in order to fuse the toner powder image onto a support or sheet and, therefore, is not structured or arranged to smooth a paper web. In fact, Appellants note that, as EDDY only discloses that the roll is intended for heating surfaces in the copier/printer for fusing a toner powder image, there is no disclosure that the roll has a smooth surface structured and arranged for smoothing paper webs.

Further, Appellants submit that claims 2, 11 - 21, 25, 29 - 33, 35, 36, 38, 39, and 41 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Appellants submit that no proper combination of the AAPA in view of EDDY teaches or suggests, inter alia, said hard roller core comprises metal, and wherein said metallic fillers comprise metal, as recited in claim 2; at least a portion of said metallic fillers comprises one of metal fibers, metal rovings, metal-coated fibers, and metal-coated rovings, as recited in claim 11; the at least a portion of said metallic fillers

comprises one of metal-coated fibers and metal-coated rovings, as recited in claim 12; fibers of said one of said metal-coated fibers and said metal-coated rovings comprise at least one of carbon and glass, as recited in claim 13; at least a portion of said fibers is aligned in the axial direction, as recited in claim 14; said at least a portion of said fibers comprises a predominant portion of said fibers, as recited in claim 15; at least a portion of said fibers is aligned in the radial direction, as recited in claim 16; said at least a portion of said fibers comprises a predominant portion of said fibers, as recited in claim 17; at least a portion of said fibers is aligned in statistical distribution, as recited in claim 18; said at least a portion of said fibers comprises a predominant portion of said fibers, as recited in claim 19; said fibers are arranged in one of a fiber layer and radially sequentially arranged fiber layers, as recited in claim 20; at least a portion of said metallic fillers are elastically formed, as recited in claim 21; said metallic fillers are arranged to extend up to a radially outer surface of said elastic matrix material, as recited in claim 25; a portion of said metallic fillers are arranged to extend radially inwardly up to a surface of said hard roller core, as recited in claim 29; a thermal expansion coefficient of said metallic fillers is smaller than a thermal expansion coefficient of said matrix material, as recited in claim 30; said thermal expansion coefficient of said metallic fillers is substantially the same as a thermal expansion coefficient of said hard roller core, as recited in claim 31; said coating layer comprises a functional layer arranged in a radially outwardly region and a connecting layer arranged in a radially inwardly region, wherein said connecting layer is adapted to connect said functional layer to said hard roller core, and wherein said metallic fillers are arranged at least in said functional layer, as recited in claim 32; said matrix material comprises a plastic material, as recited in claim 33; said

matrix material comprises a resin-hardener combination, as recited in claim 35; a concentration of said metallic fillers is substantially uniformly distributed within said elastic matrix material, as recited in claim 36; said metallic fillers comprise at least one of metal fibers and metal coated fibers, as recited in claim 38; a concentration of said metallic fillers increases in a radially inwardly direction toward said hard roller core, as recited in claim 39; and said metallic fillers comprise at least one of metal fibers and metal coated fibers, as recited in claim 41.

Accordingly, Appellants respectfully request that the Examiner's decision to finally reject claims 1, 2, 11 - 21, 25, 29 - 33, 35, 36, 38, 39, and 41 under 35 U.S.C. § 103(a) be reversed, and that the application be remanded to the Examiner for withdrawal of the rejection over AAPA in view of EDDY et al. and an early allowance of all claims on appeal.

(B) The Rejection of Claims 22 - 24 Under 35 U.S.C. § 103(a) over AAPA in view of EDDY and further in view of SUKENIK is in error, the decision of the Examiner to reject these claims should be Reversed, and the application should be Remanded to the Examiner.

The Examiner acknowledges that the AAPA and EDDY fail to disclose additional fillers including at least one of quartz or PTFE, but asserts that it would have been obvious to include such fillers in view of SUKENIK. Appellants traverse the Examiner's assertions.

Appellants note that SUKENIK fails to provide any teaching or suggestion of the subject matter noted above as deficient in the asserted combination of the AAPA and EDDY. In particular, Appellants submit that SUKENIK fails to teach or suggest fillers

arranged to improve thermal conductivity of said elastic coating layer such that heat is dissipated toward the hard roller core and dissipated axially by the hard roller core, and a roller having an elastic coating with a smooth surface structured and arranged for smoothing a paper web, as recited in at least independent claim 1.

Because the applied prior art fails to teach or suggest at least the above-noted features of the invention, Appellants submit that no proper combination of the applied teachings can render unpatentable the combination of features recited in at least independent claim 1.

Further, Appellants submit that SUKENIK fails to disclose the requisite motivation or rationale for combining the AAPA and EDDY in the manner asserted by the Examiner, particularly since the AAPA and EDDY are wholly unrelated to each other. Appellants note that SUKENIK fails to provide any teaching or suggestion for modifying the AAPA in any manner that would prevent it from operating in its intended manner, and thus fails to provide any suggestion of modifying the AAPA to radiate heat outwardly as disclosed by EDDY.

Moreover, Appellants note that, as SUKENIK is not directed to a roll for increasing the heating capacity of a roll in the manner of EDDY, it is not apparent whether modifying the AAPA in view of EDDY to include quartz or PTFE fillers would enable the modified roll of AAPA in view of EDDY to operate in its intended manner. Thus, Appellants submit that the asserted combination of the AAPA, EDDY, and SUKENIK is improper and should be withdrawn. Still further, even assuming, arguendo, that such a modification were proper (which Appellants submit it is not), Appellants

submit that it is not apparent that the resulting roll would render unpatentable the combination of features recited in at least independent claim 1.

Accordingly, Appellants submit that no proper combination of the AAPA in view of EDDY and further in view of SUKENIK can render the instant invention obvious. Further, Appellants submit that claims 22 - 24 are allowable at least for the reason that these claims depend from an allowable base claim and because they recite additional features that further define the present invention. In particular, Appellants submit that no proper combination of the AAPA in view of EDDY and further in view of SUKENIK teaches or suggests, inter alia, said elastic layer further comprising additional fillers arranged in said elastic matrix material, as recited in claim 22; said additional fillers comprise fibers including at least one of carbon and glass fibers, as recited in claim 23; and said additional fillers comprise at least one of quartz and PTFE, as recited in claim 24.

Accordingly, Appellants respectfully requests that the Examiner's decision to finally reject claims 22 - 24 under 35 U.S.C. § 103(a) be reversed, and that the application be remanded to the Examiner for withdrawal of the rejection over AAPA in view of EDDY and further in view of SUKENIK and an early allowance of all claims on appeal.

(C) The Rejection of Claims 26 and 27 Under 35 U.S.C. § 103(a) Over AAPA in view of EDDY and further in view of BROUWER is in error, the decision of the Examiner to reject these claims should be Reversed, and the application should be Remanded to the Examiner.

The Examiner acknowledges that the asserted combination of the AAPA and EDDY fails to disclose fillers penetrating the outer surface or an outer surface coated with metal, but asserts that it would have been obvious to do so according to the teaching of BROUWER. Appellants traverse the Examiner's assertions.

Appellants note that BROUWER fails to provide any teaching or suggestion of the subject matter noted above as deficient in the asserted modification of the AAPA in view of EDDY. In particular, Appellants submit that BROUWER fails to teach or suggest fillers arranged to improve thermal conductivity of said elastic coating layer such that heat is dissipated toward the hard roller core and dissipated axially by the hard roller core, and a roller having an elastic coating with a smooth surface structured and arranged for smoothing a paper web, as recited in at least independent claim 1.

Because the applied prior art fails to teach or suggest at least the above-noted features of the invention, Appellants submit that no proper combination of the applied teachings can render unpatentable the combination of features recited in at least independent claim 1.

Further, Appellants submit that, as BROUWER fails to provide any teaching or suggestion for modifying the AAPA in a manner contrary to its intended manner of operation, i.e., to dissipate heat radially outwardly, there is no motivation or rationale for combining the AAPA and EDDY in the manner asserted by the Examiner.

Moreover, Appellants note that, as BROUWER is not directed to a roll for increasing the heating capacity of a roll in the manner of EDDY, it would not have been obvious to combine the art of record in the manner asserted by the Examiner. Further, Appellants note that, as BROUWER specifically discloses the surface of the roll is

intended to be erose, there is no teaching or suggestion that it would have been obvious to provide such a surface to the roll of the AAPA as modified (albeit improperly) by EDDY, or that the improperly modified AAPA would continue to operate in its intended manner were the erose surface of BROUWER imported into it.

Thus, Appellants submit that the asserted combination of EDDY and BROUWER is improper and should be withdrawn.

Accordingly, Appellants submit that no proper combination of EDDY and BROUWER can render the instant invention obvious. Further, Appellants submit that claims 26 and 27 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further defines the present invention. In particular, Appellants submit that no proper combination of EDDY in view of BROUWER teaches or suggests, inter alia, said metallic fillers are arranged to penetrate said radially outer surface, as recited in claim 26; and a radially outer surface of said elastic matrix material is coated with metal, as recited in claim 27.

Accordingly, Appellants respectfully request that the Examiner's decision to finally reject claims 26 and 27 under 35 U.S.C. § 103(a) be reversed, and that the application be remanded to the Examiner for withdrawal of the rejection over AAPA in view of EDDY and further in view of BROUWER and an early allowance of all claims on appeal.

(D) The Rejection of Claim 34 Under 35 U.S.C. § 103(a) Over AAPA in view of EDDY and further in view of YAMAMOTO is in error, the decision of the Examiner

to reject these claims should be Reversed, and the application should be Remanded to the Examiner.

The Examiner acknowledges that EDDY fails to disclose the plastic material includes one of thermosetting resin or thermoplastic resin, but asserts that it would have been obvious to modify EDDY to include such features in view of the teachings of YAMAMOTO. Appellants traverse the Examiner's assertions.

Appellants note that YAMAMOTO fails to provide any teaching or suggestion of the subject matter noted above as deficient in the asserted modification of the AAPA in view of EDDY. In particular, Appellants submit that YAMAMOTO fails to teach or suggest fillers arranged to improve thermal conductivity of said elastic coating layer such that heat is dissipated toward the hard roller core and dissipated axially by the hard roller core, and a roller having an elastic coating with a smooth surface structured and arranged for smoothing a paper web, as recited in at least independent claim 1.

Because the applied prior art fails to teach or suggest at least the above-noted features of the invention, Appellants submit that no proper combination of the applied teachings can render unpatentable the combination of features recited in at least independent claim 1.

Further, Appellants submit that, as YAMAMOTO fails to provide any teaching or suggestion for modifying the AAPA, as assertedly modified by EDDY, in a manner contrary to its intended manner of operation, i.e., to dissipate heat radially outwardly.

Moreover, Appellants note that, as YAMAMOTO is not directed to a roll similar in general to that of the AAPA, but instead is utilized as an electrostatic latent image carrier, it is not apparent that it would have been obvious to utilize such subject matter to

modify the roll of the AAPA. Moreover, as the secondary documents are wholly dissimilar from the subject matter of the AAPA, Appellants submit that it would not have been obvious to combine the documents in the manner asserted by the Examiner.

Accordingly, Appellants submit that no proper combination of the AAPA in view of EDDY and further in view of YAMAMOTO can render the instant invention obvious. Further, Appellants submit that claim 34 is allowable at least for the reason that it depends from an allowable base claim and because it recites additional features that further define the present invention. In particular, Appellants submit that no proper combination of EDDY in view of YAMAMOTO teaches or suggests, inter alia, said plastic material comprises one of a thermosetting resin and a thermoplastic material, as recited in claim 34.

Accordingly, Appellants respectfully requests that the Examiner's decision to finally reject claim 34 under 35 U.S.C. § 103(a) be reversed, and that the application be remanded to the Examiner for withdrawal of the rejection over AAPA in view of EDDY and further in view of YAMAMOTO and an early allowance of all claims on appeal.

(E) Conclusion

Claims 1, 2, 11 - 21, 25, 29 - 33, 35, 36, 38, 39, and 41 are patentable under 35 U.S.C. § 103(a) over AAPA in view of EDDY; claims 22 - 24 are patentable under 35 U.S.C. § 103(a) over AAPA in view of EDDY and further in view of SUKENIK; claims 26 and 27 are patentable under 35 U.S.C. § 103(a) over AAPA in view of EDDY and further in view of BROUWER; and claim 34 is patentable under 35 U.S.C. § 103(a) over AAPA in view of EDDY and further in view of YAMAMOTO. Specifically, the applied art of record, even in properly combined, fails to disclose or suggest the unique

combination of features recited in Appellants' claims 1, 2, 11-27, 29-36, 38, 39, and 41. Accordingly, Appellants respectfully request that the Board reverse the decision of the Examiner to reject claims 1, 2, 11-27, 29-36, 38, 39, and 41 under 35 U.S.C. § 103(a) and remand the application to the Examiner for withdrawal of the rejection.

Thus, Appellants respectfully submit that each and every pending claim of the present application meets the requirements for patentability under 35 U.S.C. § 103(a), and that the present application and each pending claim are allowable over the prior art of record.

Respectfully submitted,
Dr. J.C. KÄRGER et al.

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August 4, 2004
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Attachments: Appendix A: Claims 1, 2, 11-27, and 29-36, 38, 39, and 41

**APPENDIX A**

CLAIMS ON APPEAL

1. An elastic roller comprising:

a hard roller core;

an elastic coating layer at an outer side of said hard roller core;

said elastic coating layer comprising an elastic matrix material and fillers imbedded in said matrix material, wherein a thermal conductivity of said fillers is considerably higher than a thermal conductivity of said matrix material; and

at least a portion of said fillers comprising metallic fillers arranged to improve thermal conductivity of said elastic coating layer such that heat is dissipated toward the hard roller core and dissipated axially by the hard roller core, wherein the elastic coating layer has a smooth surface structured and arranged for smoothing paper webs,

wherein said elastic roller is formed with a length within a range of 3 to 12 m and a diameter within a range of 450 to 1500 mm and is structured to withstand compressive forces of up to 130 N/mm2.

2. The elastic roller in accordance with claim 1, wherein said hard roller core comprises metal, and wherein said metallic fillers comprise metal fibers.

11. The elastic roller in accordance with claim 1, wherein at least a portion of said metallic fillers comprises one of metal fibers, metal rovings, metal-coated fibers, and metal-coated rovings.

12. The elastic roller in accordance with claim 11, wherein the at least a portion of said metallic fillers comprises one of metal-coated fibers and metal-coated rovings.

13. The elastic roller in accordance with claim 12, wherein fibers of said one of said metal-coated fibers and said metal-coated rovings comprise at least one of carbon and glass.

14. The elastic roller in accordance with claim 11, wherein at least a portion of said fibers is aligned in the axial direction.

15. The elastic roller in accordance with claim 14, wherein said at least a portion of said fibers comprises a predominant portion of said fibers.

16. The elastic roller in accordance with claim 11, wherein at least a portion of said fibers is aligned in the radial direction.

17. The elastic roller in accordance with claim 16, wherein said at least a portion of said fibers comprises a predominant portion of said fibers.

18. The elastic roller in accordance with claim 11, wherein at least a portion of said fibers is aligned in statistical distribution.

19. The elastic roller in accordance with claim 18, wherein said at least a portion of said fibers comprises a predominant portion of said fibers.

20. The elastic roller in accordance with claim 11, wherein said fibers are arranged in one of a fiber layer and radially sequentially arranged fiber layers.

21. The elastic roller in accordance with claim 1, wherein at least a portion of said metallic fillers are elastically formed.

22. The elastic roller in accordance with claim 1, said elastic layer further comprising additional fillers arranged in said elastic matrix material.

23. The elastic roller in accordance with claim 22, wherein said additional fillers comprise fibers including at least one of carbon and glass fibers.

24. The elastic roller in accordance with claim 22, wherein said additional fillers comprise at least one of quartz and PTFE.

25. The elastic roller in accordance with claim 1, wherein said metallic fillers are arranged to extend up to a radially outer surface of said elastic matrix material.

26. The elastic roller in accordance with claim 25, wherein said metallic fillers are arranged to penetrate said radially outer surface.

27. The elastic roller in accordance with claim 1, wherein a radially outer surface of said elastic matrix material is coated with metal.

29. The elastic roller in accordance with claim 1, wherein a portion of said metallic fillers are arranged to extend radially inwardly up to a surface of said hard roller core.

30. The elastic roller in accordance with claim 1, wherein a thermal expansion coefficient of said metallic fillers is smaller than a thermal expansion coefficient of said matrix material.

31. The elastic roller in accordance with claim 30, wherein said thermal expansion coefficient of said metallic fillers is substantially the same as a thermal expansion coefficient of said hard roller core.

32. The elastic roller in accordance with claim 1, wherein said coating layer comprises a functional layer arranged in a radially outwardly region and a connecting layer arranged in a radially inwardly region,

wherein said connecting layer is adapted to connect said functional layer to said hard roller core, and

wherein said metallic fillers are arranged at least in said functional layer.

33. The elastic roller in accordance with claim 1, wherein said matrix material comprises a plastic material.

34. The elastic roller in accordance with claim 33, wherein said plastic material comprises one of a thermosetting resin and a thermoplastic material.

35. The elastic roller in accordance with claim 1, wherein said matrix material comprises a resin-hardener combination.

36. The elastic roller in accordance with claim 1, wherein a concentration of said metallic fillers is substantially uniformly distributed within said elastic matrix material.

38. The elastic roller in accordance with claim 36, wherein said metallic fillers comprise at least one of metal fibers and metal coated fibers.

39. The elastic roller in accordance with claim 1, wherein a concentration of said metallic fillers increases in a radially inwardly direction toward said hard roller core.

41. The elastic roller in accordance with claim 39, wherein said metallic fillers comprise at least one of metal fibers and metal coated fibers.